

TDC and how it works (quick version)

As in all AEC (automatic exposure control) techniques the generator sets a density voltage according to the chamber type, the kV value, the film-screen-combination (using cassettes) or the image intensifier.

This value has to be achieved during the exposure. It is coming in via the Amplimat inputs of the generator, controlled by "dose rate control" which is physically located on-board of CU EZ139.

For AEC falling load or kV-fixed current the dose signal will be more (fixed current) or less (falling load) constant until the dose ramp reached the density voltage setpoint value and the exposure will be terminated. The exposure time is determined by the patient size and of course the application.

At TDC the density voltage setpoint is known by the exposure parameters. The exposure time is also fixed. APR data for TDC have to be set according to the sensitivity of the film-screen-combination. The average mAs value of the application and patients sizes must be programmed, the mA value with which the exposure will be started is calculated by the generator. During the exposure dose rate control tries to set a dose ramp which is almost linear throughout the exposure to achieve the density setpoint value at the end of the exposure time (the time is fixed !).

The advantage of TDC is that if the first tomo sweep has been carried out with parameters far out of range finally the second exposure will get the customer a perfect tomo exposure (as long as he does not push the APR button again which will get him the default data set again).